



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,684	10/28/2003	Mark Pereira	NVID-P000621	5051
45594 7590 11/27/2007 NVIDIA C/O MURABITO, HAO & BARNES LLP. TWO NORTH MARKET STREET THIRD FLOOR SAN JOSE, CA 95113			EXAMINER PAUL, DISLER	
			ART UNIT 2615	PAPER NUMBER
			MAIL DATE 11/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/695,684		PEREIRA, MARK	
	Examiner		Art Unit	
	Disler Paul		2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6,7 and 11-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 11-22 is/are allowed.
- 6) ☒ Claim(s) 1,3-4,6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foxlin ("US 6,176,837 B1") and Milsap (US 7,130,430 B2).

Re claim 1, Foxlin discloses a sound wave-based tracking system ("fig. 1-2, 5") comprising: a speaker at a fixed-location for automatically transmitting a sound wave signal having a given frequency above an audible range ("fig. 5 (550); col. 5 line 60-66, col. 3 line 47-52"); a plurality of microphones mounted upon an object for receiving said signal ("fig. 5 (520); fig. 1; col. 1 line 42-50"); a computing device for determining at least one of a position and orientation of said object as from a delay of said given signals by each plurality of microphones (col. 1 line 60-67; col. 2 line 5-15; fig. 1 (130)), col. 3 line 55-65).

However, Foxlin fail to disclose of the speaker transmitting given signal combined with one or more signals. But, Milsap disclose of a system wherein the speaker transmitting given signal combined with one or more signals (fig. 3 wt (98-102; col. 7 line 33-41; col. 1 line 15-30/plurality of sound combined) for the purpose of sending the particular signals associated with the pointers to such a particular speaker. Thus, taking the combined teaching of Foxlin and Milsap as a whole, it would have been obvious for one of the ordinary skill in the art to have modify Foxlin by incorporating such the speaker transmitting given signal combined with one or more signals for the purpose of sending the particular signals associated with the pointers to such a particular speaker.

3. Claims 3-4,21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foxlin ("US 6,176,837 B1") and Milsap (US 7,130,430 B2) and further in view of Kataoka ("US 2002/0181723 A1).

Re claim 3, The sound-wave based tracking system according to claim 1, However, Foxlin fail to disclose of the specific wherein said signal comprises a marker and wherein said delay is determined as a function of a delay between said marker received by each of the plurality of microphones. However, Kataoka disclose a microphone detecting device wherein the similar concept of having a signal comprises a marker ("fig. 7-8; page 1[0007] line 8-12-different amplitude sound is being capture as function of time (marker), also please see page 1[0008]") and wherein said delay is determined as a function of receipt of said marker by each of said plurality of microphones ("page 1[0010] lien 1-4; fig. 1/5; fig. 6-8-error is delay between each received sound signals") for the purpose of estimating the sound source direction. Thus, taking the combined teaching of Foxlin and now Kataoka as a whole, it would have been obvious for one of the ordinary skill in the art to modify Foxlin by incorporating the signal comprises a marker and wherein said delay is determined as a function of a delay between said marker received by each of the plurality of microphones for the purpose of estimating the sound source direction.

Re claim 4, The sound-wave tracking system according to claim 1, However, Foxlin does not expressively disclose of the detail wherein in said delay is determined as a function of time delay of between said signal received by each of said plurality of microphones. But, Kataoka did disclose of a system wherein he disclose of the detail wherein in said delay is determined as a

function of time delay of between said signal received by each of said plurality of microphones ("page 3[0038] line 12-15; page 1[0007] line 1-3; page 1[0008]") for the purpose of determining the sound source location. Thus, taking the combined teaching of Foxlin and Kataoka as a whole, it would have been obvious for one of the ordinary skill in the art to have modified Foxlin by incorporating the detail wherein in said delay is determined as a function of time delay of between said signal received by each of said plurality of microphones for the purpose of determining the sound source location.

Re claim 21, has been analyzed and rejected with respect to claim 3 above.

Re claim 22, the audio-based tracking system according to claim 1, But, Foxlin fail to disclose of the specific wherein said delay is determined as a function of time delay of said signal received by each of said plurality of microphones relative to a reference signal. However, Kataoka disclose of a system wherein the delay is determined as a function of time delay of said signal received by each of said plurality of microphones relative to a reference signal (page 1[0007-8]) for the purpose enhancing accuracy in signal recognition. thus, taking the combined teaching of Foxlin and Kataoka as a whole, it would have been obvious for one of the ordinary skill in the art to have modified Foxlin by incorporating the delay is determined as a function of time delay of said signal received by each of said plurality of microphones relative to a reference signal for the purpose enhancing accuracy in signal recognition.

4. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foxlin ("US 6,176,837 B1), Milsap (US 7,130,430 B2) and further in view of Cristiamo Avigni ("US 2003/0142829 A1").

Re claim 6, the audio-based tracking system according to claim 1, however, Foxlin fail to disclose the said plurality of said microphones communicate wirelessly with said computing device. Avigni discloses a system for capturing sound from a moving object in which plurality of microphones communicate wirelessly with computing device ("fig. 2/10, fig. 3-(plurality of microphones) with computing device (fig. 2/100; fig. 10/100); page 1[0005] line 11-12") for the purpose of wirelessly transmitting such signals to location remote from the moving object. Therefore taking the teaching of Foxlin and Avigni as a whole, it would have been obvious for one skill in the ordinary art to incorporate the said plurality of said microphones communicate wirelessly with said computing device in Foxlin for the purpose of wirelessly transmitting such signals to location remote from the moving object.

Allowable Subject Matter

2. Claims 7, 11-13, 14-20 are allowed.

Re claim 7, while, foxlin disclose of the method of tracking comprising: transmitting a signal of non-audible signal and determining at least one of a relative position and relative orientation of said plurality of microphones as a function of said determined delays of received signal.

However, Foxlin fail to disclose of the transmitting simultaneously the first and seonc non-audible signal from a first and second speaker and determining a delay for each of said received first and second non-audible signals for each of the plurality of microphones and thus determining the position and orientation of said plurality of microphones as a function of said delay.

Similarly, reclaim 14 has been allowed partly in view of the above limitation of claim 7.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number:
10/695,684
Art Unit: 2615

Page 8

DP


VRAAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2615